METALLURGIA—Index to Volume LVII

Published by the Kennedy Press Ltd., 31 King Street West, Manchester 3

JANUARY—JUNE, 1958

Page

LEADERS

Fifty Years of Service 217
Human Aspects of Technical Change 1–2
Safety First 109
Steel Progress and Prospects .. 57
The Right Direction 165
The Sky's the Limit.. 271

ARTICLES

A

Accelerated High Temperature Oxidation due to Vanadium Pentoxide. By Dr. K. Sachs.. 123–137, 167–173, 224–232
Alloys of Titanium and Zirconium Containing Tin. By R. F. Smart 181–188
All-Welded Gas Main, Fabrication of an 251
Aluminium Alloy Fan Castings, Finishing 29–30
Aluminium and its Alloys in 1957. Some Aspects of Research and Technical Progress Reported. By E. Elliott .. 79–92
Aluminium and its Alloys (The Use of) in Private Cars. By R. K. Bolton 59–63
Aluminium, A Review of Diffusion in. By J. W. H. Clare .. 273–278
Aluminium Casting Alloys, Stronger. By F. H. Smith .. 64–70
Aluminium Foil, The Production and Conversion of. By J. R. Green 71–74
Aluminium Plate Production. New Ancillary Equipment in Operation at Rogerstone .. 175–180
Aluminium Powder and Paste, The Production and Uses of. By V. J. Hill 75–78
Aluminium, Progress in the Joining of. By N. T. Burgess 117–121
Aluminium Smelter (New) in Production. First Metal Poured at Baie Comeau .. 31–32
Argonarc Welding on Sports Car Bodies 232
Automatic Gauge Control in Sheet Rolling. Nucleonic Unit in Operation at Birmingham.. 19–22

B

Bar Mill, Double-Duo. Bright-side Installation for Sanderson Brothers and Newbould, Ltd. 94–96
Buffer, The Johnston 143–147
Bright Annealing of Sheet Metal with Non-Oxidising Gas .. 27

C

Cars (Private), The Use of Aluminium and its Alloys in. By R. K. Bolton 59–63
Casting Alloys, Aluminium. By F. H. Smith 64–70
Cemented Oxide Tools. Wickman's Applications Research Unit 28–29
Cleaning, Ultrasonic 148
Coke Oven Gas, Removal of Sulphur from 278
Coking Coals, Making the Best of. Burstlein Process Licence for Woodall-Duckham 30
Controlled Atmosphere Production, Liquefied Petroleum Gases for. By L. G. W. Palethorpe 219–223
Copper and Copper Alloys. A Survey of Technical Progress During 1957. By Dr. E. Voce 3–15
Copper (High Purity), The Strain Hardening Behaviour of. An Appraisal of Tests by Carreker and Hibbard. By Dr. E. Voce 111–116
Cranes (Mobile) for the Steel Industry 36

D

Defects (Metallurgical) in High Speed Steels. By E. Niesielski 233–245
Diffusion in Aluminium, A Review of. By J. W. H. Clare 273–278
Double-Duo Bar Mill. Bright-side Installation for Sanderson Brothers and Newbould, Ltd. 94–96

E

Electric Fusion-Welded Pipe, Manufacture of 173–174
Electro-refining of Nickel, New Process for the 174

F

Fatigue (Metal), "Size" Effects and Their Possible Significance for "Non-Propagating" Cracks in. By W. J. Harris .. 193–197
Fatigue Strength of Specimens Cut from Pre-loaded Blanks. By N. E. Frost 279–282
Finishing Aluminium Alloy Fan Castings 29–30
Foil (Aluminium), The Production and Conversion of. By J. R. Green 71–74
Ford's New Foundry at Dagenham 16–18
Friction Materials, Sintered Metal and Cerametallic.. .. 247–250
Furnace Atmospheres from Liquids. By I. L. S. Golding 23–25
Furnace Installations, Recent Heat Treatment. Annual Survey of Developments .. 283–302

G

Gas Main, Fabrication of an All-Welded 251
G.E.C. Power-Operated Manipulator. Remote Handling Device 303–305
Germanium Resistance Thermometer 250

H

Heaters (Industrial), New High Temperature. Suitable for Direct and Indirect Heating 305–306
Heat Treatment Furnace Installations, Recent. Annual Survey of Developments .. 283–302
High Purity Copper, The Strain Hardening Behaviour of. An Appraisal of Tests by Carreker and Hibbard. By Dr. E. Voce 111–116
High Speed Steels, Metallurgical Defects in. By E. Niesielski.. 233–245
High Temperature Industrial Heaters, New. Suitable for Direct and Indirect Heating .. 305–306
High Temperature Oxidation (Accelerated) due to Vanadium Pentoxide. By Dr. K. Sachs.. 123–137, 167–173, 224–232
Hot Strip Mill, Measuring Width in a. Servo-Driven Optical Device Uses Infra-Red Radiation 307–308
Hydraulic Rams in Corrosive Atmosphere 254
Hydrogen-Induced Failure .. 180

I

Industrial Heaters, New High Temperature. Suitable for Direct and Indirect Heating.. 305–306
Infra-Red Radiation, Servo Driven Optical Device Uses. Measuring Width in a Hot Strip Mill.. 307–308
Instrumentation for Large Turbo-Blower 97–98
International Alloys, Ltd., Silver Jubilee of 26–27

J

Johnston Buffer, The. An Item of British Steel Foundry History 143–147
Joining of Aluminium, Progress in the. By N. T. Burgess .. 117–121

L

Light Alloy Water Tanks for Tankers 311
Liquefied Petroleum Gases for Controlled Atmosphere Production. By L. G. W. Palethorpe 219–223
Liquids, Furnace Atmospheres from. By I. L. S. Golding .. 23–25

M

Mains Frequency Induction Melting of High Speed Steels. Birlec Installation at Inca Steel 198
Manipulator, Power-Operated. Remote Handling Device .. 303–305
Mercury Arc Converters (Use of) for Reversing Rolling Mill Drives 309–311
Metal Fatigue, "Size" Effects and Their Possible Significance for "Non-Propagating" Cracks. By W. J. Harris .. 193–197
Metallurgical Defects in High Speed Steels. By E. Niesielski 233–245
Molybdenum-Base Alloys .. 223

N

Nickel, New Process for the Electro-refining of 174
Non-Oxidising Gas, Bright Annealing of Sheet Metal with .. 27
"Non-Propagating" Cracks in Metal Fatigue, "Size" Effects and Their Possible Significance for. By W. J. Harris .. 193–197
Nucleonic Unit in Operation in Birmingham. Automatic Gauge Control in Sheet Rolling 19–22

O

Optical Device (Servo-Driven) Uses Infra-Red Radiation. Measuring Width in a Hot Strip Mill.. 307–308
Oxidation (Accelerated High Temperature) due to Vanadium Pentoxide. By Dr. K. Sachs .. 123–137, 167–173, 224–232

Page

P

Petroleum Gases (Liquefied) for Controlled Atmosphere Production. By L. G. W. Palethorpe 219–223
Plastic Coated Steel 192
Power-Operated Manipulator, G.E.C. Remote Handling Device 303–305
Pre-loaded Blanks, The Fatigue Strength of Specimens Cut from. By N. E. Frost .. 279–282
Press Shop (Modern) at Luton. Important Part of Vauxhall's Expansion Programme .. 252–254
Production and Conversion of Aluminium Foil. By J. R. Green 71–74
Production and Uses of Aluminium Powder and Paste. By V. J. Hill 75–78

R

Rams (Hydraulic) in Corrosive Atmosphere 254
Resistance Thermometer, Germanium 250
Reversing Rolling Mill Drives, Use of Mercury Arc Converters for 309–311
Rolling Mill Drives. Some Recent Electrical Installations 189–192
Round Oak Steel Works Centenary 33–35

S

Servo-Driven Optical Device Uses Infra-Red Radiation. Measuring Width in a Hot Strip Mill 307–308
Sheet Metal, Bright Annealing of, with Non-Oxidising Gas .. 27
Sheet Rolling, Automatic Gauge Control in. Nucleonic Unit in Operation at Birmingham .. 19–22
Sintered Metal and Cermetallic Friction Materials 247–250
"Size" Effects and Their Possible Significance for "Non-Propagating" Cracks in Metal Fatigue. By W. J. Harris .. 193–197
Standards, New and Revised .. 122, 308
Strain Hardening Behaviour of High Purity Copper, The. An Appraisal of Tests by Carreker and Hibbard. By Dr. E. Voce 111–116
Sulphur, Removal of, from Coke Oven Gas 278

T

Thermometer, Germanium Resistance 250
Tin, Alloys of Titanium and Zirconium Containing. By R. F. Smart 181–188
Titanium and Zirconium Alloys Containing Tin. By R. F. Smart 181–188
Translations Available. Co-operative Translation Service 216, 246
Turbo-Blower, Instrumentation for Large 97–98

U

Ultrasonic Cleaning 148

V

Vacuum Melted Metals. Steel, Titanium and Zirconium in Production 139–142
Vanadium Pentoxide, Accelerated High Temperature Oxidation due to. By Dr. K. Sachs 123–137, 167–173, 224–232

Page

W

Welding (Argonarc) on Sports Car Bodies 232

Z

Zirconium and Titanium Alloys Containing Tin. By R. F. Smart 181–188

CORRESPONDENCE

"Domestic Metallurgy." E. Wood, C. C. Hanson 22, 138
Tau and Y-Phases from Austenitic Steels, the Identity of the. O. Knop, J. F. Brown, W. D. Clark and A. Parker .. 137–138

CURRENT LITERATURE

Reviews

"B.S.I. Yearbook." British Standards Institution 319
"Difficulties Encountered in Smelting in the Lead Blast Furnace." Institution of Mining and Metallurgy 45
"Engineering Standards for Pressure Die Casting." Zinc Alloy Die Casters Association 45–46
"Hot Dip Galvanising, 1956." Zinc Development Association 205
"Isothermal Transformation of Austenite." Available as Translation No. 734 from the Co-operative Translation Service, The Iron and Steel Institute 319–320
Kempe's Engineer's Year-Book, 1958. Morgan Brothers (Publishers), Ltd. 155
"Nickel and its Alloys." U.S. Government Printing Office .. 205–206
"Soldering Aluminium." Aluminium Development Association 45
"Spectrochemical Abstracts, Vol. V: 1952–53." Hilger & Watts, Ltd. 319
"Statistical Summary of the Mineral Industry, 1951–56." H.M. Stationery Office .. 319
The Report of the Research Council of the Department of Scientific and Industrial Research. H.M. Stationery Office 272
Trade Publications 46, 155–156, 206, 320

RECENT DEVELOPMENTS IN MATERIALS, TOOLS AND EQUIPMENT

Aluminium Sheeting, Shallow-Troughed. Northern Aluminium Co., Ltd. 41–42
Bromide Sodium Safelamp. Kodak, Ltd. 260
Calcium Sulphide Photo-Cell. Mullard, Ltd. 203
Ceramic Filter. Aerox, Ltd. .. 42
Coke Oven Safety Device. Woodall-Duckham Construction Co., Ltd. 151
Combustion Additive for Solid Fuels. Amber Chemical Co., Ltd. 257
"Compound" Water Meters. George Kent, Ltd. 103–104
Continuing Graphite Electrode Salt Baths. Electric Resistance Furnace Co., Ltd. .. 103
Dall Orifice. George Kent, Ltd. 203
Dew-Point Meter. Electric Resistance Furnace Co., Ltd. .. 153
Diaphragm Valves for Process Control. Honeywell-Brown, Ltd. 260
Dry Bearings. The Glacier Metal Co., Ltd. 318

Page

Electrical Etchers. David Dowling, Ltd. 43
Electrode Holders. Lincoln Electric Co., Ltd. 41
Electrode Improvement. Quasi-Arc, Ltd. 260
Electronic Temperature Controller. Sifam Electrical Instrument Co., Ltd. 316
Electronic Timer. British Oxygen Gases, Ltd. 43
Flame-Failure and Ignition Controllers. Ether, Ltd. 204
Flame-Failure Equipment. Elcontrol, Ltd. 44
Galvanised Sheet, Improved. John Summers & Sons, Ltd. .. 316–317
Gear Roll Tester. David Brown Industries, Ltd. 258–259
Gouging and Piercing Electrodes. Welding Electrode Division, The English Electric Co., Ltd. 202–203
Guillotine, High Speed. Keeton, Sons & Co., Ltd. 315
Hard-Facing Powder. Wall Colmonoy Corporation 258
Heavy Duty Box Furnace. Hedin, Ltd. 104
Heavy Duty Propane Regulator. British Oxygen Gases, Ltd. .. 318
High Impedance Recorder. Sunvic Controls, Ltd. 317
Hilger Triple Medium Spectrograph. Hilger & Watts, Ltd. 317
Honeycomb Bond Check. Magnaflux Corporation 316
Hydraulic Elevator Truck. Powell & Co. 44
Induction Motors, Small. The General Electric Co., Ltd. .. 315
Industrial X-Ray Equipment. Marconi Instruments, Ltd. .. 201–202
Infra-Red Projector. Metropolitan-Vickers Electrical Co., Ltd. 318
Instrument Failure Safety Unit. Foster Instrument Co., Ltd. .. 202
Lapping Materials. B.P.S. Machinery and Spares Co., Ltd. 44
Low Temperature Ovens. Barlow-Whitney, Ltd. 204
Magnetic Particle Coupling. S. Smith & Sons (England), Ltd. 315–316
Metallic Borides. Borax Consolidated, Ltd. 154
Metal Spraying Machine. Metallising Equipment Co., Ltd. .. 259–160
Millivoltmeter Controllers. Honeywell-Brown, Ltd. .. 258
Mobile Crane. K. & L. Steelfounders and Engineers, Ltd. 317–318
Molytone Grease Range. Rocol, Ltd. 154
Multi-Point Control Valves. Baldwin Instrument Co., Ltd. 151
Operation Recorder. Fielden Electronics, Ltd. 42–43
Paintsticks. A. Levermore & Co., Ltd. 204
Pneumatic Bench Vice. The Consolidated Pneumatic Tool Co., Ltd. 257–258
*p*H Meter Test Set. A. M. Lock & Co., Ltd. 259
Photoelectronic Relay. Photoelectronics (M.O.M.), Ltd. .. 154
Pitalux W and Pitan Flat Thixotropic Factory Wall Paint. Allweather Paints, Ltd. 41
Polarograph Conversion Unit. Southern Instruments Computer Division 153–154
Radiograph Illuminator. Newton-Victor, Ltd. 152

Page

43
41
260
316
43
204
44
316–317
258–259
202–203
315
258
104
318
317
317
316
44
315
201–202
318
202
44
204
315–316
154
259–160
258
317–318
154
151
42–43
204
257–258
259
154
41
153–154
152

Page

Resuscitator, Portable British Oxygen Gases, Ltd. 43–44
Safety Shield for Exposed Conductors. British MonoRail, Ltd. 257
Shielded Inert Gas Welding Equipment. Quasi-Arc, Ltd. 259
Slotted Angle. Dexion, Ltd. .. 318
Smoke Density Control Equipment. Photoelectronics (M.O.M.), Ltd. 151–152
Swarfega Waterless Wash-Station. Deb Chemical Proprietaries, Ltd. 202
Tapping Fluid. Amber Oils, Ltd. 318
Tektor Major Level Controller. Fielden Electronics, Ltd. .. 201
Temperature Controller. Ether, Ltd. 152
Temperature Recorder. Ether, Ltd. 103
Transformer Plug. The Dohm Group 257
Uvispek Prism, New. Hilger and Watts, Ltd. 154
Vacuum Cleaner for Liquids and Solids. Martindale Electric Co., Ltd. 203–204
Vanadium Oxide, 98% Grade. Alloys Division of Union Carbide, Ltd. 104
Voltage Stabiliser. Servomex Controls, Ltd. 201
Welding Gantry. Quasi-Arc, Ltd. 42

LABORATORY METHODS

Absorptiometric Determination of Traces of Chromium in Nickel and Vanadium, of Vanadium in Chromium, and of Nickel in Chromium and Vanadium. By J. T. McAloren and G. F. Reynolds 52–56
Aluminium, A New Reagent for the Colorimetric Determination of. By H. Green 157–158
Atomic Research Facilities, G.E.C. Expands 213–215
Chromium in Nickel-Vanadium, Vanadium in Chromium, and Nickel in Chromium-Vanadium Mixtures, The Determination of. By J. T. McAloren and G. F. Reynolds 52–56
Colorimetric Determination of Aluminium, A New Reagent for the. By H. Green 157–158
Composite Procedure for the Determination of Mo, Ni, Mn, Fe, Cr, Sn, V and N in Titanium Alloys. By G. Norwitz and M. Codell 261–270
Electrolytic Polishing. New Equipment with Provision for Circulating the Electrolyte, by Shandon Scientific Co., Ltd. .. 107–108
G.E.C. Expands Atomic Research Facilities. New Laboratory for Beryllium Studies .. 213–215
Hardness Testing Machine, A New Standard. By R. S. Marriner and F. C. P. Mason .. 47–51
Kunze-Willey Method, The Determination of Tin and Tin-Iron Alloy Weights on Tinplate using the. By F. Cooke and C. E. A. Shanahan 321–326
Laboratory Arc Furnace. Vacuum or Inert Atmosphere Melting 163–164
Metallographic Application of X-Ray Scanning Microanalysis. By Dr. D. A. Melford and Dr. P. Duncumb 159–161

Page

Metallurgical Microscopy, The Standardisation of Photographic Exposures in. By L. E. Samuels, T. O. Mulhearn and R. M. Robb 207–212
Microanalysis (X-Ray Scanning), The Metalographic Application of. By Dr. D. A. Melford and Dr. P. Duncumb 159–161
Microphotometry of the Photographic Plate, Some Observations on the Measurement of Spectral Line Intensities by. D. R. Curry 162–163
Microscopy (Metallurgical), The Standardisation of Photographic Exposures in. By L.E. Samuels, T. O. Mulhearn and R. M. Robb 207–212
Nickel in Chromium-Vanadium, Vanadium in Chromium and Chromium in Nickel-Vanadium Mixtures, The Determination of. By J. T. McAloren and G. F. Reynolds 52–56
Photographic Exposures in Metallurgical Microscopy, The Standardisation of. By L. E. Samuels, T. O. Mulhearn and R. M. Robb 207–212
Polishing, Electrolytic. Shandon Equipment 107–108
Rapid Titrimetric Analysis of White Metals. By L. J. Ottendorfer 105–106
Scanning Microanalysis (X-Ray), The Metallographic Application of. By Dr. D. A. Melford and Dr. P. Duncumb 159–161
Spectral Line Intensities (Some Observations on the Measurement of) by Microphotometry of the Photographic Plate. By D. R. Curry 162–163
Standard Hardness Testing Machine, A New. By R. S. Marriner and F. C. P. Mason 47–51
Standardisation of Photographic Exposures in Metallurgical Microscopy. By L. E. Samuels, T. O. Mulhearn and R. M. Robb 207–212
Tin and Tin-Iron Alloy Weights on Tinplate (The Determination of), Using the Kunze-Willey Method. By F. Cooke and C. E. A. Shanahan .. 321–326
Titanium Alloys, Composite Procedure for the Determination of Mo, Ni, Mn, Fe, Cr, Sn, V and N in. By G. Norwitz and M. Codell 261–270
Titrimetric Analysis (Rapid) of White Metals. By L. J. Ottendorfer 105–106
Vacuum or Inert Atmosphere Melting. Laboratory Arc Furnace 163–164
Vanadium in Chromium, Nickel in Chromium-Vanadium, and Chromium in Nickel-Vanadium Mixtures, The Determination of. By J. T. McAloren and G. F. Reynolds 52–56
White Metals, Rapid Titrimetric Analysis of. By L. J. Ottendorfer 105–106
X-Ray Scanning Microanalysis, The Metallographic Application of. By Dr. D. A. Melford and Dr. P. Duncumb 159–161

METALLURGICAL DIGEST

Stress-Corrosion Cracking, a New Theory on 147

Page

NEWS AND ANNOUNCEMENTS

A.D.A. Appointments 306
All-Welded Gas Main, Fabrication of an 251
Asian Iron and Steel Experts .. 70
Automatic Polishing Machines.. 254
Beilby Memorial Awards .. 99
Birlec and Canadian Market .. 78
Birlec, Chinese Delegation Visits 2
Birlec Dryers for Nuclear Power Plant 38
Bright Annealing of Sheet Metal with Non-Oxidising Gas .. 27
British Driver-Harris in the South-West 78
British MonoRail Move 308
British Oxygen Dounreay Contract 122
British Oxygen Factory, New .. 282
British Stainless Steel Rail at Brussels 313
Brush Free-Piston Order .. 39
Carbide Extrusion Dies 121
Carbide Factory in Ulster .. 25
C.D.A. Magazine 100
City and Guilds Courses 312
Coke Oven Battery (New) for Workington Iron and Steel Co. 39
Computer Programming Courses 56
Contact Sulphuric Acid Plant .. 51
Corrosion, Summer School on .. 199
Cranes (Mobile) for the Steel Industry 36
Cybernetics Periodical 313
Data Handling System for Capenhurst 164
Davy-United Move 212
Deuce, Repeat Orders for .. 39
Dow International Communications 161
Drage Instrument Agency .. 270
Efco-Udylite Changes 282
Electric Furnace Melting for Diecasting 174
European Steel and Coal Production 101
Extrusion Press, 12,000 Ton .. 36
Films 35, 96, 106, 251, 308
Firth Cleveland Steel Strip, Ltd. New Trade Mark 174
Flaw Detection Service 38
Fletcher Miller, Ltd. 39
Foundry Development Plan at Csepel Metal Works, Budapest 188
Foundry Services, Ltd. 18
Furnace Contract, £500,000 .. 166
Gas Main, Fabrication of an All-Welded 251
Ghana Iron Ore Discovery .. 188
Graduate Foundry Course .. 99
High Pressure Process Division. Woodall-Duckham Construction Co., Ltd. 255
Honours List, New Year .. 93, 98
Hot Dip Galvanising Conference 37
Hot Flat Rolling, Calculation of Load and Torque in 15
Hydrogen-Induced Failure .. 180
Import, Duties, Iron and Steel.. 18, 313
Index to Scientific Journals .. 218
Indian Iron and Steel Trainees.. 63
Institute of British Foundrymen's Conference 149
Institute of Metals 149, 312
Instruments (Industrial), Greater Use of 70
International Galvanising Conference 199
Iron and Steel Institute 255, 312
Iron Ore from Brazil 122
ISCOR Expansion 106
Jamaican Iron and Copper Finds 116
Light Alloy Water Tanks for Tankers 311
Liquid Nitrogen, Novel Use for 272
Machine Tool Showroom 270

	Page
Mains Frequency Furnace Orders	18
Mains Frequency Induction Melting of High Speed Steels. Birlec Installation at Inca Steel	198
Materials Handling Films	313
Mechanical Handling Exhibition	149–150
Megator's U.S. Subsidiary	56
Metal Brainpower Pool	32
Metallography Course	256
Micro	58, 199–200
Mikro-D Equipment, Sales Service for	2
Mond Nickel Fellowships	99
Multelec Recorder, Mark 2A	74
Nickel Industry in 1957	63
N.P.L., Changes at	142
Nu-Swift, Italian Order for	39
Oxygen Factory at Crawley	56
Oxygen Plants near Completion	313–314
Patent Information Service	100
Pena Buys Welsh Metal Company	39
Personal News	40, 78, 101–102, 142, 150, 200, 256, 306, 314
Phosphating Processes Approved	313
Physical Society Exhibition	149
Plastic Coated Steel	192
Plate Mill Order	78
Polarographic Society	149
Productivity Film Catalogue	312–313
Pulse Height Analyser School	99–100
Research Council Report	272
R.C.S.T. Metallurgical Club Journal	100
Rhodesian Steel Developments	25
Russian Journals, Translation of	255–256
Rust-Inhibiting Paint Film	158
Scrap—The 35,000 ton battleships *Anson* and *Duke of York* and the frigate *Widemouth Bay*	56
Siemens Exhibition	212
Slabbing Mill (New) for Appleby-Frodingham	308
Smoke Charts	302
Solartron Factory, New	18
Sonde Place Research Laboratories' Extension	40
Southern Instruments, Ltd.	270
Standards, New and Revised	122, 308
Steel Castings Research Paper for U.S.A.	56
Steel Tube Prices	100
Steelwork for Nuclear Power Station	39–40
Suprex Competition	38
Titanium Offer by Jessop	166
Tonnage Oxygen for Gas Industry	272
Trace Analysis, Pure Reagents for	308
Transformers and Switchgear Orders	78
Transistor Company Formed	308
Translation Service, Co-operative	116, 216, 246
Translators, Register of	100
Trevelyan Scholarships	37
Turbine Gear Machinery Orders	251
Uranium Find in Rhodesia	138
Vacuum Arc Furnace, Large	246
Vacuum Melting Furnace Order	38
Valve Manufacturing Project	256
Vitreous Enamelled Blackboards	326
Wakefield's New London Showroom	40
Waverley Gold Medal Essay Competition	200
Wear, New Journal on	313
Welded Steel Structures, Conference on	142
Welding Lecture, Annual	149
Welding Publications. Quasi-Arc, Ltd.	246
Welding Technology, School of	218
Welding Training, Demand for	39
West of Scotland Iron and Steel Institute. Award of the Riley Medal	250
Wild-Barfield Plant for Russia	39
Wilmot Breeden Fellowships	199
Yorkshire Imperial Metals, Ltd.	158

OBITUARY

	Page
Mr. J. Harold Brown	40
Mr. W. W. Franklin	102
Mr. W. B. H. Gallwey	102
Mr. W. Geary	150
Mr. H. Matthews	102
Mr. Alastair McLeod	102
Mr. P. H. Muirhead	314
Mr. C. Fox Parker	150
Mr. J. H. Pawley	314
Mr. A. H. Waine	314

AUTHOR INDEX

	Page
Bolton, R. K.	59–63
Burgess, N. T.	117–121
Clare, J. W. H.	273–278
Codell, M., and Norwitz, G.	261–270
Cooke, F., and Shanahan, C. E. A.	321–326
Curry, D. R.	162–163
Duncumb, P., and Melford, D. A.	159–161
Elliott, E.	79–92
Frost, N. E.	279–282
Golding, I. L. S.	23–25
Green, H.	157–158
Green, J. R.	71–74
Harris, W. J.	193–197
Hill, V. J.	75–78
Marriner, R. S., and Mason, F. C. P.	47–51
Mason, F. C. P., and Marinner, R. S.	47–51
McAloren, J. T., and Reynolds, G. F.	52–56
Melford, D. A., and Duncumb, P.	159–161
Mulhearn, T. O., Robb, R. M., and Samuels, L. E.	207–212
Niesielski, E.	233–245
Norwitz, G., and Codell, M.	261–270
Ottendorfer, L. J.	105–106
Palethorpe, L. G. W.	219–223
Reynolds, G. F., and McAloren, J. T.	52–56
Robb, R. M., Mulhearn, T. O., and Samuels, L. E.	207–212
Sachs, K.	123–137, 167–173, 224–232
Samuels, L. E., Mulhearn, T. O., and Robb, R. M.	207–212
Shanahan, C. E. A., and Cooke, F.	321–326
Smart, R. F.	181–188
Smith, F. H.	64–70
Voce, E.	3–15, 111–116

	Pag
	150
	102
	102
	314
	150
	314
	314
	59–63
	117–121
	273–278
	261–270
	321–326
	162–163
	159–161
	79–92
	279–282
	23–25
	157–158
	71–74
	193–197
	75–78
	47–51
	47–51
	52–56
	159–161
	207–212
	233–245
	261–270
	105–106
	219–223
	52–56
	207–212
	224–232
	207–212
	321–326
	181–188
	64–70
	111–116